

TABLE 1.—Solar radiation intensities during October, 1925

[Gram-calories per minute per square centimeter of normal surface]

## Washington, D. C.

Date		Sun's zenith distance										Local mean solar time	
		8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°		Noon
		Air mass											
		A. M.					P. M.						
		e.	5.0	4.0	3.0	2.0	1.0	2.0	3.0	4.0	5.0		e.
Oct. 7	mm. 7.29	cal. 0.67	cal. 0.58	cal. 1.09	cal. 1.44	1.22	cal. 1.14	cal. 1.02	cal. 0.91	mm. 7.04			
8	6.50			0.98						6.27			
10	2.74		1.04	1.20	1.37	1.56				2.62			
20	3.80	0.83	0.99	1.15	1.33	1.53				2.87			
21	4.17	0.78	0.88	1.00	1.21					3.00			
23	4.75				1.03					3.99			
29	2.36	0.77	0.92	1.03	1.21	1.35				2.36			
31	3.81	0.70	0.84	1.03	1.23	1.49		1.05	0.92	0.83			
Means		0.77	0.89	1.04	1.18	1.47	(1.22)	(1.10)	(0.97)	(0.87)			
Departures		-0.01	+0.04	+0.09	+0.07	+0.01	+0.11	+0.17	+0.17	+0.17			

## Madison, Wis.

Oct. 10	3.00	1.01	1.09	1.19	1.29	1.40					3.45
17	3.00	0.94	1.05		1.31	1.48					3.15
30	2.06						1.19				1.96
31	1.78	0.67	0.86	0.98	1.18	1.41					3.15
Means		0.87	1.00 (1.06)	1.26	1.43		(1.19)				
Departures		+0.13	+0.07	+0.02	+0.07	+0.05	+0.17				

<sup>1</sup> Extrapolated.

## WEATHER OF NORTH AMERICA AND ADJACENT OCEANS

## NORTH ATLANTIC OCEAN

By F. A. YOUNG

The following table shows the average sea-level pressure and departure for the month, as well as the highest and lowest barometer reading at a number of land stations on the coast and islands of the North Atlantic. The readings are for 8 a. m., seventy-fifth meridian time, and the departures are only approximate, as the normals were taken from the Pilot Chart and are based on Greenwich mean noon observations, which correspond to those taken at 7 a. m. seventy-fifth meridian time.

Stations	Average pressure	Departure	Highest	Date	Lowest	Date
St. Johns, Newfoundland	Inches 29.65	Inches -0.27	Inches 30.16	3d	Inches 29.12	9th
Nantucket	29.94	-0.08	30.46	30th	29.30	10th
Hatteras	30.01	-0.02	30.38	11th	29.64	5th
Key West	29.99	+0.01	30.12	12th	29.94	14th
New Orleans	30.02	+0.01	30.26	10th	29.84	16th
Swan Island	29.87	-0.04	29.94	12th	29.80	14th
Turks Island	30.01	+0.06	30.08	12th	29.90	5th
Bermuda	30.08	+0.05	30.26	2d	29.82	10th
Horta, Azores	29.98	-0.14	30.38	27th	29.58	19th
Lerwick, Shetland Islands	29.74	-0.05	30.30	7th	28.61	23d
Valencia, Ireland	29.85	-0.06	30.52	1st	28.67	22d
London	29.93	+0.02	30.46	2d	28.86	23d

<sup>1</sup> And on other dates.TABLE 1.—Solar radiation intensities during October, 1925  
Lincoln, Nebr.

Date	Sun's zenith distance											Local mean solar time
	8 a.m.	78.7°	75.7°	70.7°	60.0°	0.0°	60.0°	70.7°	75.7°	78.7°	Noon	
	75th mer. time	Air mass										
		A. M.					P. M.					
		e.	5.0	4.0	3.0	2.0	1.0	2.0	3.0	4.0	5.0	
Oct. 9	mm.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	mm.	
14	3.81			1.15	1.35	1.53	1.38	1.24	1.15	1.04	2.87	
15	6.50					1.53	1.38	1.21	1.07	0.96	4.95	
19	4.95	0.76	0.91	1.09	1.31	1.53	1.28	1.10	0.94	0.78	4.75	
20	3.00	1.00	1.14	1.27	1.42	1.60	1.42	1.27	1.14	1.04	2.49	
22	3.15		0.98	1.16	1.39	1.56	1.40	1.25	1.12	0.99	2.26	
26	4.75		0.92	1.06	1.21						5.36	
28	3.30								1.10	1.04	2.62	
30	1.24	1.02	1.16	1.34	1.48	1.68	1.46	1.18			1.82	
31	1.37				1.34		1.33	1.13	1.03	0.91	2.87	
31	3.00		0.85	1.08							3.81	
Means		0.93	0.99	1.16	1.36	1.58	1.38	1.20	1.08	0.97		
Departures		+0.03	+0.03	+0.05	+0.07	+0.08	+0.12	+0.11	+0.12	+0.12		

TABLE 2.—Solar and sky radiation received on a horizontal surface  
[Gram-calories per square centimeter of horizontal surface]

Week beginning—	Average daily radiation					Average daily departure from normal		
	Washington	Madison	Lincoln	Chicago	New York	Washington	Madison	Lincoln
Oct. 1 1925	cal. 248	cal. 190	cal. 178	cal. 157	cal. 213	cal. -80	cal. -94	cal. -174
8	182	197	246	127	211	-125	-59	-78
15	223	182	337	166	182	-64	-47	+43
22	194	144	219	128	135	-70	-62	-45
Deficiency since first of year on Oct. 28						-812	-189	-2,499

While the average pressure for the month was not far from the normal at the last three stations given, the averages for the three decades differed materially. At Lerwick the average for the 1st decade was 30.18 inches, for the second, 29.87 inches; and for the last 11 days; 29.24 inches. At Valentia the figures for the same periods are as follows: 30.40 inches, 29.95 inches, and 29.24 inches, respectively.

Taken as a whole, this was undoubtedly one of the stormiest Octobers on record over the North Atlantic. The number of days with winds of gale force was not only much above the normal as shown on the Pilot Chart, but three of the disturbances were of exceptional severity, and the greater part of the ocean was visited by heavy weather at one time or other during the month, although comparatively moderate weather prevailed over the eastern section of the steamer lanes until the 17th. Over 150 vessels rendered storm reports, but, due to lack of space, it is impossible to give but a small portion of them in the table.

As is often the case during an unusually stormy month, the number of days with fog was much below the normal shown on the Pilot Chart. This was especially true over the Grand Banks, where fog was reported on from three to four days only, while off the coasts of America and northern Europe the frequency was about the same.

On the 1st there was a shallow depression near 35° N., 48° W., that moved rapidly northward, the center on the 2d being near 46° N., 45° W., and on the 3d near 50° N., 40° W. On the 2d, moderate to strong gales prevailed over the region between the fortieth and forty-fifth parallels and the forty-fifth and fifty-fifth meridians, while on the 3d the storm area extended from the forty-fifth to fifty-fifth parallels and thirty-fifth to forty-fifth meridians.

On the 4th there was a LOW over Nova Scotia that moved rapidly northeastward and on the 5th was central near Belle Isle, where it remained nearly stationary until the 7th.

On the 8th there were two LOWS over the ocean; the first central near 40° N., 55° W., and the second over the Azores. By the 9th the two disturbances had apparently joined, being central near 47° N., 55° W. On the 9th there was also a depression near Hatteras that afterwards developed into one of the severest storms of the month. On the 8th gales were reported from a limited area between the Bermudas and Newfoundland, and also in the vicinity of the Azores, while by the 9th the storm area had increased, covering the western section of the steamer lanes. On the 9th unusually strong winds were encountered in the Gulf of Mexico, as shown by the report in table from the American S. S. *Alabama*.

Charts VIII and IX show the conditions on the 10th and 11th, respectively. On the 10th the two areas of low pressure were responsible for exceptionally severe weather over the western half of the ocean, while by the 11th the storm area had contracted in extent, the eastern LOW having apparently filled in. On the 11th strong winds were again reported from the Gulf of Mexico, as shown by report from American S. S. *Gulfcoast*. On the 12th the northwestern disturbance was central near Belle Isle, and northwesterly gales still prevailed between the thirty-fifth parallel and Newfoundland, west of the fiftieth meridian. According to press report heavy marine casualties were due to this storm, especially among small craft.

On the 13th and 14th comparatively moderate weather prevailed over the entire ocean. On the 15th Father Point was near the center of a LOW that increased in intensity as it moved slowly eastward. On the 17th there was a secondary LOW near 36° N., 40° W., that afterwards apparently joined with the main depression, which continued to deepen, reaching its greatest intensity on the 19th, when barometric readings of less than 28 inches were reported.

Charts X to XIII show the conditions from the 19th to 22d, inclusive.

On the 23d the center of the disturbance was off the coast of Great Britain and the eastern section of the steamer lanes was still swept by westerly gales of hurricane force. This storm caused a great deal of damage to shipping, and captains of liners were reported to have said that it was the worst of their experience. On the 23d there was a second disturbance central near Sable Island, with strong gales between the thirty-fifth and

forty-fifth parallels, west of the fifty-fifth meridian. On the 24th the western LOW was central near Belle Isle, and the eastern off the north coast of Scotland, while both of the storm areas had decreased in intensity and extent. On the 25th New York was near the center of another LOW that was responsible for strong southwesterly gales along the American coast, between Nantucket and Hatteras, and storm reports were also received from vessels in mid-ocean while comparatively quiet weather prevailed off the European coast.

On the 26th the western LOW was central near Father Point, and westerly winds of gale force prevailed between Nova Scotia and Nantucket. The eastern disturbance apparently took on a new lease of life on the 26th, as on that date westerly gales were again encountered east of the thirtieth meridian. The western LOW moved steadily eastward and on the 28th was central near 55° N., 35° W. On both the 27th and 28th storm reports were received from all parts of the steamer lanes, although there was no well-defined storm area. This disturbance increased rapidly in intensity and extent, and on the 29th the center was off the coast of Ireland, while strong westerly gales swept the ocean east of the fortieth meridian, the storm area extending as far south as the Azores. On the 29th there was another depression over Nova Scotia, with southerly gales in the easterly quadrants. On the 30th the conditions over the eastern section did not differ materially from those of the previous day; off the coast of Georgia strong northeasterly winds prevailed, accompanied by comparatively high barometric readings.

On the 31st westerly gales of hurricane force prevailed between the fortieth and fiftieth parallels and thirtieth and fiftieth meridians, and northeasterly gales along the American coast between Nantucket and Hatteras. On the same date there was also a depression in the Gulf of Mexico, accompanied by winds of gale force.

Waterspouts during the month were reported as follows:

American S. S. *Coldwater*, Capt. A. C. Forward; observer, H. Olesen, Charleston to Bremen:

At 3 p. m., October 5, in 40° 36' N., 57° 28' W., observed immense waterspout.

British S. S. *Muneric*, Capt. Wm. Hare; observer, R. McAuslan, New Orleans to Frontera:

At 9.30 a. m., October 10, in 24° 15' N., 90° 42' W., passed close to well-formed waterspout.

Weather Bureau office, Corpus Christi, Tex., Mr. J. P. McAuliffe in charge:

On October 9, between 11 and 11.50 a. m., four waterspouts were observed in the vicinity of Corpus Christi. Three formed over Corpus Christi Bay, the fourth over Nueces Bay. The largest of the waterspouts first appeared about 3 miles off shore and traveled rapidly in a southwesterly direction, breaking up upon striking the land.

Mr. McAuliffe states that the atmosphere was unusually oppressive at the time, but that a norther occurred soon afterwards.